

**ABSTRACT**

**STANDARDIZATION OF SIMPLICIA AND 96% ETHANOLIC EXTRACT OF BITTERLEAF (*Vernonia amygdalina* Delile.)**

Nyoman Yoga Irwan Perkasa

Bitterleaf (*Vernonia amygdalina* Delile.) is one of medicinal plant and had been used as traditional medicine. So far, in its uses, bitterleaf will be developed as standardized herbal drug and phytopharmaca product. So that, the standardization process should be done and it was begun by determination of standard parameter of simplicia and extract which will be used. Standard parameter which used in this research refers to Herbal Pharmacopoeia of Indonesia. This research will compare the result of standardization of bitterleaf from Tuban, Kebumen and Surabaya.

The result of the standard parameters of bitterleaf simplicia showed that determination of loss on drying content from Tuban was  $(11,73 \pm 0,10)\%$ , from Kebumen was  $(12,37 \pm 0,08)\%$ , from Surabaya was  $(11,29 \pm 0,07)\%$ . Determination of water soluble extractive substance from Tuban was  $(19,12 \pm 0,36)\%$ , from Kebumen was  $(19,75 \pm 1,00)\%$ , from Surabaya was  $(18,80 \pm 0,68)\%$ . Determination of ethanol soluble extractive substance from Tuban was  $(20,48 \pm 0,23)\%$ , from Kebumen was  $(18,16 \pm 0,04)\%$ , from Surabaya was  $(18,72 \pm 0,94)\%$ . Determination of total ash content from Tuban was  $(13,17 \pm 0,22)\%$ , from Kebumen was  $(13,20 \pm 0,07)\%$ , from Surabaya was  $(11,67 \pm 0,06)\%$ . Determination of acid insoluble ash content from Tuban was  $(0,45 \pm 0,01)\%$ , from Kebumen was  $(0,52 \pm 0,01)\%$ , from Surabaya was  $(0,63 \pm 0,02)\%$ . Determination of total flavonoid content from Tuban was  $(6,70 \pm 0,10)\%$ , from Kebumen was  $(6,47 \pm 0,07)\%$ , from Surabaya was  $(5,43 \pm 0,05)\%$ . Chromatograph pattern by TLC showed that bitterleaf from all area have flavonoid content that compared by Rutin.

The result of the standard parameters of bitterleaf 96% ethanolic extract showed that, the yield of extract from Tuban was 21.4%, from Kebumen was 21.8%, from Surabaya was 23.6%. Determination of total ash from Tuban was  $(12,16 \pm 0,15)\%$ , from

Kebumen was ( $12.00 \pm 0.24$ )%, from Surabaya was ( $11.98 \pm 0.19$ )%. Determination of acid insoluble ash content from Tuban was ( $1.56 \pm 0.04$ )%, from Kebumen was ( $1.67 \pm 0.03$ )%, from Surabaya was ( $1.57 \pm 0.04$ )%. Determination of the water content from Tuban was ( $12.33 \pm 0.58$ )%, from Kebumen was ( $11.66 \pm 0.58$ )%, from Surabaya was ( $11.65 \pm 0.57$ )%. Determination of total flavonoid content from Tuban was ( $37.76 \pm 0.06$ )%, from Kebumen was ( $34.62 \pm 0.06$ )%, from Surabaya was ( $34.87 \pm 0.38$ )%.

Keyword : Standardization, Herbal Pharmacopoeia of Indonesia, *Vernonia amygdalina* Delile.

